IN THE CLAIMS

Please amend claims 26 and 30 as follows:

1-14. Cancelled

15. (Withdrawn) A process for producing a semiconductor device, comprising:

coating a first side of a carrier with a first diffusion-soldering alloy;

coating a second side of the carrier with a second diffusion-soldering alloy wherein the melting points of diffusion-soldering alloys and diffusion-soldered joints are staggered in such a manner that a first melting point of the first diffusion-soldering alloy is lower than a second melting point of the second diffusion-soldering alloy, and the second melting point being lower than a third melting point of a first diffusion-soldered joint produced from the first diffusion-soldering alloy;

diffusion-soldering a first substrate to the first side of the carrier by heating the first diffusion-soldering alloy to the first melting point; and

diffusion-soldering a second substrate to the second side of the carrier by heating the second diffusion-soldering alloy to the second melting point.

16. (Withdrawn) The process according to claim 15, wherein the first diffusion-soldering alloy is the composition Ga-yNi where 1% by weight < y < 20% by weight or Ga-xCu where 1% by weight < x < 40% by weight or Ga-yAg where 1% by weight < y < 40% by weight is applied to the first side, and the second diffusion-soldering alloy is the composition In-xAg where 1% by weight < x < 30% by weight or Sn-yAg where 1% by weight < y < 50% by weight is applied to the second side.

17. (Withdrawn) The process according to claim 15, wherein the first diffusion-soldering alloy of the composition Ga-yNi where 1% by weight < y < 20% by weight or Ga-yAg where 1% by

weight < y < 40% by weight is applied to the first side, and the second diffusion-soldering alloy of the composition In-xAg where 1% by weight < x < 30% by weight or Sn-yAg where 1% by weight < y < 50% by weight or Au-xSn where 5% by weight < x < 38% by weight, preferably where 10% by weight < x < 30% by weight, is applied to the second side.

18. (Withdrawn) The process according to claim 15, wherein the diffusion-soldering alloy of the composition Ga-yAg where 1% by weight < y < 40% by weight is applied to the first side, and the diffusion-soldering alloy of the composition In-xAg where 1% by weight < x < 30% by weight or Sn-yAg where 1% by weight < y < 50% by weight or Au-xSn where 5% by weight < x < 38% by weight, preferably where 10% by weight < x < 30% by weight or Au-yGe where 4% by weight < y < 50% by weight, remainder Au, preferably where 7% by weight < y < 20% by weight, remainder Au, is applied to the second side.

19. (Withdrawn) The process according to claim 15, wherein the first diffusion-soldering alloy of the composition In-xAg where 1% by weight < x < 30% by weight is applied to the first side, and the second diffusion-soldering alloy of the composition Sn-yAg where 1% by weight < y < 50% by weight or Au-xSn where 5% by weight < x < 38% by weight, preferably where 10% by weight < x < 30% by weight, or Au-yGe where 4% by weight < y < 50% by weight, remainder Au, preferably where 7% by weight < y < 20% by weight, remainder Au, is applied to the second side.

20. (Withdrawn) The process according to claim 15, wherein the first diffusion-soldering alloy of the composition Sn-yAg where 1% by weight < y < 50% by weight is applied to the first side, and the second diffusion-soldering alloy of the composition Au-xSn where 5% by weight < x < 38% by weight, preferably where 10% by weight < x < 30% by weight, or Au-yGe where 4% by weight < y < 50% by weight, remainder Au, preferably where 7% by weight < y < 20% by weight, remainder Au, is applied to the second side .

21. (Withdrawn) The process according to claim 16, wherein the first diffusion-soldering alloy

of the composition Au-xSn where 5% by weight < x < 38% by weight, preferably where 10% by weight < x < 30% by weight, is applied to the first side, and the second diffusion-soldering alloy of the composition Au-yGe where 4% by weight < y < 50% by weight, remainder Au, preferably where 7% by weight < y < 20% by weight, remainder Au, is applied to the second side .

22. (Withdrawn) The process according to claim 15, wherein a layer of silver, copper or nickel is applied to each side of at least one of the carrier or of the semiconductor chip prior to the application of the diffusion-soldering alloy.

23. (Withdrawn) The process according to claim 15, wherein a layer of copper or a copper alloy is additionally applied prior to the application of the second diffusion-soldering alloy comprising Au-yGe where 4% by weight < y < 50% by weight, remainder Au, preferably where 7% by weight < y < 20% by weight, remainder Au.

24. (Withdrawn) The process according to claim 15, wherein a layer of copper or silver or an alloy thereof is applied prior to the application of a diffusion-soldering alloy comprising Sn-yAg where 1% by weight < y < 50% by weight or Au-xSn where 5% by weight < x < 38% by weight, preferably where 10% by weight < x < 30% by weight.

25. (Withdrawn) The process according to claim 15, wherein a layer sequence made up of aluminum and titanium is applied prior to the application of a diffusion-soldering alloy to the sides of a semiconductor chip.

26. (Currently Amended) A semiconductor device, comprising:

a semiconductor chip having a rear side and a top side with contact surfaces thereon,

a chip island having the rear side soldered thereto in ~~with~~ a first diffusion-soldered joint from a first diffusing-soldering alloy having a first melting point,

flat conductors soldered to the contact surfaces on the top side of the semiconductor chip ~~with~~ in a second diffusion-soldered joint from a second diffusion-soldering alloy having a second melting point;

wherein the first and second melting points are different.

27. (Previously Presented) The semiconductor device according to claim 26, wherein a metal layer of copper or silver or nickel is between the diffusion-soldered joints and the respective top side and rear side of the semiconductor chip.

28. (Previously Presented) The semiconductor device according to claim 26, wherein a layer sequence made up of aluminum and titanium is present on the sides of the semiconductor chip.

29. (Previously Presented) The semiconductor device according to claim 26, wherein the first diffusion-soldered joint has intermetallic phases including Ag_3Sn and Ag_5Sn, and the second diffusion-soldered joint has intermetallic phases including Cu_3Ge and Cu_5Ge.

30. (Currently Amended) A semiconductor device, comprising:

a chip island;

a semiconductor chip having a rear side and a top side with contact surfaces thereon;

a first diffusion-soldered joint from a first diffusion-soldering alloy having a first melting point situated between the rear side and the chip island;

flat conductors; and

a second diffusion-soldered joint from a second diffusion-soldering alloy having a second melting point situated between the top side and the flat conductors;

wherein the first and second melting points are different.

31. (Previously Presented) The semiconductor device according to claim 30, further comprising a buffer layer of silver situated between the first diffusion-soldering alloy and the rear side.

32. (Previously Presented) The semiconductor device according to claim 30, further comprising a buffer layer of silver situated between the second diffusion-soldering alloy and the top side.

33. (Previously Presented) The semiconductor device according to claim 30, further comprising a layer sequence made up of aluminum and titanium situated between the first diffusion-soldering alloy and the rear side.

34. (Previously Presented) The semiconductor device according to claim 30, further comprising a layer sequence made up of aluminum and titanium situated between the second diffusion-soldering alloy and the top side.

35. (Previously Presented) The semiconductor device according to claim 30, wherein the first diffusion-soldering alloy comprises Au-xSn where 10% by weight < x < 30% by weight.

36. (Previously Presented) The semiconductor device according to claim 30, wherein the second diffusion-soldering alloy comprises Au-yGe where 7% by weight < y < 20% by weight.